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- 159 Enrico Levirini, Joint Production:  
Review of Some Studies on Sraffa's System
- 176 Four Questions on Joint Production
- 177 Salvatore Baldone
- 185 Gérard Duménil and Dominique Lévy
- 213 Marco Lippi
- 223 Neri Salvadori and Ian Steedman
- 231 Bertram Schefold
- 243 Paolo Varri
- 251 Pierangelo Garegnani, Actual and Normal Magnitudes: A Comment on Asimakopulos
- 259 Athanasios Asimakopulos, Reply to Garegnani's Comment
- 263 Edward Nell, Does the Rate of Interest Determine the Rate of Profit?
- 269 Larry Randall Wray, The Monetary Explanation of Distribution - A Critique of Pivetti
- 275 Massimo Pivetti, On the Monetary Explanation of Distribution: A Rejoinder to Nell and Wray

# On the Monetary Explanation of Distribution: a Rejoinder to Nell and Wray

Massimo Pivetti

1. A few significant perplexities about my view of the rate of interest as a policy-determined variable which governs income distribution by governing the ratio of prices to money wages, seem to strengthen Nell's conviction that this ratio must be governed by something else, and the rate of growth of demand appears to him as the most promising candidate. As to the way he sees normal distribution to be related to the growth of demand, he seems inclined to share an Eichner-Wood approach in terms of the amount of profits required to finance the expansion of capacity (cf. Nell's passing remark to this effect, on p. 265 of this issue). Be that as it may, there is no doubt that if it were true that the normal rate of profit is, somehow or other, determined by the growth of demand, then monetary policy would have little effect on interest rates, which could only be moved in the same direction as growth rates — indeed, since interest and profit cannot move independently of each other over the long run, it would be “much more plausible to argue that the normal rate of profit determines the long-term normal rate of interest” (p. 267). In other words, the two explanations of distribution are obviously incompatible with one another, and what Nell actually does in the final part of his comment is merely to oppose my explanation with the one he deems more convincing. In this rejoinder I shall deal with those points in Nell's comment that express perplexity about the view of distribution that I put forward, in that they might point to some logical fault in my line of reasoning and or its departure from reality.

2. At one point in his comment Nell seems willing to admit that a lasting change in the rate of interest (provided there is no effect of it on aggregate demand) would affect the ratio of prices to money wages in the manner

suggested by my view of distribution.<sup>1</sup> However, he raises the question of how one can consider lasting changes in interest rates, when the latter are viewed as determined by such an “evanescent” factor as monetary policy, the influence of which cannot be more than temporary. By “lasting changes in interest rates” I meant, in my contribution, such episodes as the rise in interest rates in the United Kingdom over the second half of the Twenties; the twenty-year period of cheap money policy inaugurated in 1932, or the return to ‘orthodoxy’ and higher interest rates after 1951; the world-wide up-turn in interest rates initiated in the autumn of 1968 by the American monetary authorities, or the high interest rate policy followed by the United States over the first half of the Eighties. My contention is that any such episode can very reasonably be explained by reference to circumstances of a non-evanescent character which had nothing to do with a *primum movens* represented by changes in the normal rate of profit.<sup>2</sup>

It seems to me that behind Nell’s difficulty in conceiving as *lasting* policy-determined changes in interest rates, there is the *theory* of distribution he has in mind. Indeed, anyone who regarded the normal rate of profit as ‘setting the pace’ in its relationship with the money rate of interest — whether on classical, marginalist, or ‘post-Keynesian’ grounds — is likely to share Nell’s perplexity. Although economic theory has always acknowledged that the rate of interest may be acted upon by causes other than the rate of profit, changes in money interest due to these “other” causes have almost invariably been regarded as merely *temporary* (more of this in para. 3, below).

Nell says that one merit of my view of distribution is that “it makes sense” of the Gibson paradox — that is to say, of the large body of evidence which shows that interest rates and the price level are positively rather than inversely correlated. But he maintains that it is difficult to reconcile the view that a policy-determined rate of interest governs the rate of profit,

<sup>1</sup> According to Nell, given the money wage, a lowering of prices would take place as a result of a fall in the rate of interest only if actual interest payments “are subtracted as a cost on a par with wages” and the rate of profit is considered net of interest (cf. p. 266, above). But to conceive of the normal rate of profit as consisting solely of the normal profits of enterprise runs contrary to all economic theory; besides, Nell’s reasoning implies that the price of one and the same good will be high or low depending on whether much or little debt capital is employed in its production. The concept that one employs of normal profit rate and margins should be such as to bring about the same results as for normal costs and prices, irrespective of the manner in which capital employed in production is provided (by means of stock, bonds, loans or the firm’s own funds). The fact is that for Nell the normal rate of profit depends on the rate of growth of demand, so that the former cannot change if the latter remains unaltered; accordingly, the concept of profit he employs in the argument must be such as to render its constancy compatible with the fall in the ratio of prices to money wages which would be brought about, as Nell acknowledges, by a lasting lowering of the rate of interest.

<sup>2</sup> Cf. my “On the Monetary Explanation of Distribution”, in vol. 1 (1985), n. 2, of this Journal, pp. 78-81.

with the equally large body of evidence which shows that the price level and the quantity of money are also positively correlated. The reason for the difficulty is seen in the fact that, in order to lower interest rates, the monetary authorities will expand the money supply, and vice versa to raise them — so that, if prices move directly with interest rates, then prices must move inversely to the supply of money: “This — Nell writes — flatly contradicts virtually all thinking on the role of the Quantity of Money; we need not accept the Quantity Theory to view an *inverse* relation between the price level and the money supply with suspicion”.

These observations of Nell’s give me the opportunity to try to further clarify my ‘monetary’ vision of distribution, by explicitly looking at it in the context of the following three monetary relationships: the relationship between the rate of interest and the price level; the relationship between the price level and the quantity of money; and that between the quantity of money and the rate of interest. In my argument, money interest is considered to be under direct official control — i.e. monetary policy is viewed as exerting itself *primarily* on the level of interest rates, rather than on the quantity of money, with the implication that interest rates tend not to vary capriciously.<sup>3</sup> It is worthwhile emphasizing from the start that my ‘monetary’ explanation of distribution is centred upon the notion of the rate of interest as the variable that governs the *ratio* of prices to money wages; and that, *solely* on the basis of this notion, no a priori direct or inverse relation can be established between the level of prices and the money supply.

3. Let us now consider the first of the above relationships: the one between the the rate of interest and the price level. It is true that there is nothing ‘paradoxical’ in a positive correlation between interest rates and the price level, when the phenomenon is viewed in the light of my theory: given money wages and production techniques, a rising (lowering) of prices, as a result of a lasting rising (lowering) of interest rates, would merely reflect the adaptation of prices to normal costs, caused by competition.

But with few exceptions,<sup>4</sup> the existence in actual fact of a positive

<sup>3</sup> As has recently been observed, “Central Banks have historically been at some pains to assure the banking system that the institutional structure is such that the system as a whole can *always* obtain access to whatever cash the system may require in order to meet its needs, though at a price of the Central Bank’s choosing; and there has been a further, implicit corollary that the interest rate will not be varied capriciously. ... Central Banks assert that, given the present institutional structure, the attempt to enforce and impose a certain predetermined level of monetary base on the banking system, irrespective of that system’s requirements at the time for cash reserves, would lead to a devastating increase in the volatility of interest rates” (C. GOODHART, “Monetary Base”, *The New Palgrave: A Dictionary of Economics*, London, Macmillan, 1987, III, p. 501).

<sup>4</sup> Cf., for example, Friedman and Schwartz’s efforts to show the Gibson phenomenon “to be a much more limited relation than it is often represented to be” (M. FRIEDMAN and M. J. SCHWARTZ, *Monetary Trends in the United States and the United Kingdom: Their Relations to Income, Prices, and Interest Rates, 1865-1975*, Chicago and London, The University of Chicago Press, 1982, p. 557; see in part. pp. 530-537, 585-587 and 630-631).

correlation between interest rates and prices is nowadays acknowledged by theoretical economists, and, starting from Wicksell, that correlation has been accounted for within the marginalist theory of distribution. In fact, the so-called Gibson paradox can be “made sense of” also by *any* theory of distribution which, contrary to the view I put forward, regards the money rate of interest as ultimately determined by the normal rate of profit (whether on marginalist, classical or ‘post-Keynesian’ grounds). The critical point is that to reconcile the “paradox” with any such theory of distribution, one is compelled to interpret virtually *any* change in the long-term rate that does in actual fact take place as an *adaptation* or *response* to a prior movement in prices and in the normal rate of profit. In other words, in order to explain the fact that interest and prices rise and fall together, anyone equipped with a ‘real’ theory of interest must substantially discard a long-accepted and reality-induced idea, namely that “The rate of interest, though ultimately and permanently governed by the rate of profit, is however subject to temporary variations from other causes”.<sup>5</sup> In the presence of such “temporary variations”, interest rates and the price level would have to be *inversely* correlated, because, for a given rate of profit, temporary reductions and rises in interest rates would tend respectively to increase and diminish inflationary pressures. Indeed, this inverse correlation between interest and prices was long postulated as an important aspect of the process of adaptation of the money rate of interest to the normal rate of profit — the aspect thanks to which any variation in money interest “from other causes” could be thought of as merely temporary. But since an inverse correlation between interest and prices is very rarely encountered in actual experience, one is forced by the theory to question the fact that money interest may be acted upon, albeit temporarily, by causes other than the rate of profit.

Concerning the relationship between the price level and the quantity of money, let us first refer solely to money in *active circulation*. There will then be a positive correlation between the price level and the quantity of money, with the causation running from the former to the latter and the amount of money in circulation resulting therefore as a demand-determined quantity. For any given state of technique, real output and the level of money wages, interest rates would regulate the amount of money in circulation via their influence on the price level: interest, prices and the quantity of money would thus all move in the *same* direction, with the policy-determined interest rates acting as the *primum movens* of the process.

The above relations become less straightforward if we take “quantity of money” to mean the money supply or the total amount of money in

<sup>5</sup> D. RICARDO, “Principles” (3rd ed. 1821), in P. SRAFFA (ed.), *Works and Correspondence*, Cambridge, Cambridge University Press, 1951, p. 297.

existence — that is, both money in active circulation and money held as inactive balances. To the extent that the latter is sensitive to interest rate changes, their implementation by the monetary authorities will require, at a given level of money income, some opposite movement in the money supply — so that our *direct* relation between interest and prices would imply an *inverse* relation between the price level and the quantity of money as a *proportion* of the money value of the national income.<sup>6</sup> So, in my view, given the market opinion about the future course of interest rates, the money supply, at a given level of real output and money wages, would be acted upon by a policy-determined change in interest rates in two opposite directions — the quantity of money held as inactive balances moving inversely to interest rates, whilst the quantity in active circulation moves directly with them, because of the influence of interest rates on the level of prices. This can also be expressed by saying that, given real output and money wages, a rise (fall) in interest rates increases (reduces) the average velocity of circulation of money, by reducing (increasing) the proportion of the total amount of money in existence that is held in inactive form, and hence has zero velocity of circulation.<sup>7</sup>

The upshot of my argument thus far is that, if prices, given money wages and production techniques, move directly with interest rates, then money in active circulation — a quantity that adapts itself to the needs of trade — will also vary directly with interest rates. We can therefore draw the following relation (*Fig. 1*) between  $i$ , the ‘exogenously’ determined rate

<sup>6</sup> The existing evidence which shows that the price level and the quantity of money are positively correlated concerns the *absolute* quantity of money. As one would expect, the money supply (currency and ‘current accounts’ deposits) shows an upward trend in the major capitalist countries over the last fifty years, with accelerations during the periods of more marked increases in the gross national products — increases following partly from expansions in the volumes of production and partly from rises in the general price levels. There is no evidence to show a positive correlation between the price level and the money supply as a *proportion* of the money value of the national income. Thus in England this proportion fell from about 55% in 1951, the last year of the twenty-year period of cheap money policy, to approximately 45% in 1956, in the face of a rise in prices over the same years estimated to have represented about half the rise in the value of British production as a whole (cf. RADCLIFFE REPORT, *Memoranda of Evidence*, London, HMSO, 1960, vol. I, pp. 17 and 22). Indeed, it has been pointed out that “it is in the country [post-World War II Germany] with the lowest inflation rate that the money supply has shown a persistent rate of growth in excess of the rise in money income” (N. KALDOR, *The Scourge of Monetarism*, Oxford, Oxford University Press, 2nd edition, p. 86).

<sup>7</sup> Very much the same point as the last two propositions in the text was made by Tooke in terms of “prices of commodities” *versus* “prices of securities”. Tooke wrote that “these two descriptions of objects of purchase are acted upon by a low rate of interest in an exactly opposite direction. A low rate of interest is almost synonymous with a high price of securities; while, as I have shown, its necessary tendency is to reduce the prices of commodities by diminishing the cost of production” (T. TOOKE, *An Inquiry into the Currency Principle* (1844), London, The London School of Economics and Political Sciences, Series of Reprints of Scarce Works on Political Economy n. 15, 1959, p. 86).

of interest, and  $Mac$ , the demand-determined quantity of money in active circulation at a given level of real output:

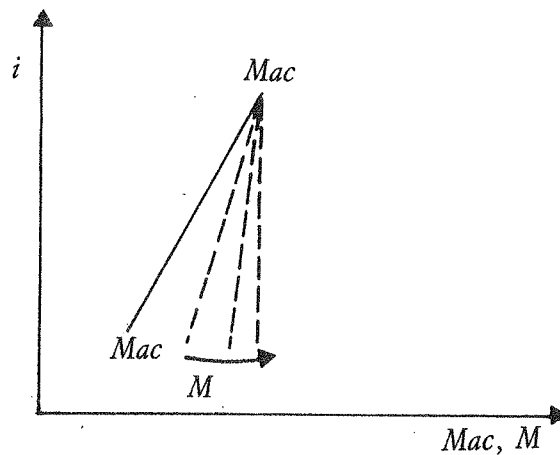


Fig. 1

where the actual shape of the positively sloped  $Mac$  schedule ultimately depends on production techniques — it is on the latter that depends the change in the price level (in normal money production costs) which, given money wages, must be brought about by any given change in the rate of interest. The more the quantity of money held in inactive form is dependent on (inversely related to) the rate of interest, the more ‘twisted’ counterclockwise, with respect to the relation between  $i$  and  $Mac$ , will in turn be the relation between  $i$  and  $M$ , the demand-determined *total* supply of money.

Finally, the impact of changes in interest rates on the money supply becomes highly indeterminate if the *ceteris paribus* clause is abandoned. In fact, no a priori functional relationship, direct or inverse, between  $i$  and  $M$  can be established, in our ‘monetary’ vision of distribution, if the level and composition of real output, as well as money wages, are not assumed to remain unchanged in the face of changes in interest rates. For example, let us suppose a lasting lowering of interest rates. The ensuing change in income distribution might bring about a rise in the level of activity, via its combined net impact on the propensity to consume and the inducement to invest.<sup>8</sup> The money supply would tend in such a case to be positively rather than negatively affected by the assumed lowering of interest rates;

<sup>8</sup> On the effect of interest on aggregate demand, see my “On the Monetary explanation of Distribution”, *op. cit.*, pp. 97-100. Contrary to what Nell seems to understand (cf. this issue, p. 265), the reason why I object in my contribution to “both mainstream and ‘Cambridge’ theories”, as to an inverse relation between the rate of interest and investment, is quite independent of the critique of the substitution principle. The point is that in my line of reasoning the normal returns to be expected from a given investment are not independent of the rate of interest but tend to move parallel with it, so that a lasting lowering (rising) of the long-term rate will not raise (lower) the ‘demand price’ of a capital good relative to its ‘supply price’.

the more so, if the rise in activity levels caused money wages to stand higher than they would otherwise have done, and thus caused a higher *level* of prices to be associated with the lower *ratio* of prices to money wages determined by the lowering of interest rates.

Therefore, what picture emerges from the above analysis concerning the relationship between interest rates and the quantity of money? On the basis of my concept of the rate of interest as a policy-determined variable that governs income distribution by governing the ratio of prices to money wages, it can be said that any lasting change in interest rates *will* act upon the money value of national income, and hence upon the endogenously determined money supply. This is because, in the first place, any change in distribution between profits and wages will influence effective demand and real output, and, secondly, because any change in the ratio of prices to money wages is most likely also to be associated with some change in the price level. But since there is no a priori functional link that makes it possible to predict the direction of the impact of a given change in distribution on effective demand, so it must also be concluded that the quantity of money outstanding may be affected either way by a lasting change in interest rates.

4. Wray's critique also basically concerns my concept of the rate of interest as an independent variable with respect to the rate of profit. If the rate of interest is not governed, or limited, by a predetermined rate of profit, what does it depend upon? He maintains that my contribution is unclear as to the determinants of the rate of interest, and that it does not contain a convincing argument in support of a monetary theory of interest. Wray also observes that my analysis "does not explain how profit (or interest) arises", and he believes my view to be hardly consistent with the surplus approach, "in which profits arise in production because labour is able to produce a greater quantity of commodities than required to produce itself".<sup>9</sup>

In my contribution I tried to support the thesis that lasting changes in money interest are the cause, not the effect, of changes in normal profit

<sup>9</sup> A few minor observations by Wray concern: the effect of a change in the rate of interest on the general price level *versus* its relative price effects; the effects of demand on profits; and the relationship between the money supply and the rate of interest. Wray seems to suspect that the two types of price effects pointed out in my contribution might not "move in conjunction to ensure that the distribution of income would change in a predictable pattern" (this issue, p. 270); I believe that a somewhat more thorough reflection on the question will easily free him from this suspicion. Regarding the effects of demand upon profits, I tried to make clear in my contribution (cf. its paragraph 7) that the analysis concerns the explanation of the *normal* rate of profit, in the meaning that this term has always had in economic theory, and never refers to the actual rate of profit and actual profits which are of course acted upon by demand. As to the relationship between the quantity of money and the rate of interest, see paragraph 3 of this rejoinder.

rates, both by reference to concrete reality and on purely logical grounds. Support by reality was taken to mean that actual experience seems to provide elements capable of showing an autonomous or 'prior' determination of the money rates of interest — i.e. that interest-rate policies, in the short and the long run alike, do not appear to be constrained by a somehow or other predetermined normal profitability of capital — with the corollary that, in the generally acknowledged relationship connecting interest and profit, it must be the former which 'sets the pace'. In this precise sense it can be said that my approach is characterized by a monetary theory of interest.

Interest-rate determination naturally comes to the forefront in the proposed explanation of distribution. Consideration of actual experience seems to indicate, first of all, that it is the level of the rates of interest, rather than a given quantity of money, which constitutes the primary object of manoeuvre of the monetary authorities; secondly, that there is no explanation for the level of money interest which can be credited with any general validity. The level of interest rates prevailing in any given situation appears clearly to be determined by the monetary authorities on the basis of policy objectives and constraints, the nature and the weight of which can only be ascertained by reference to the concrete historical experience of each country. Such a factor as "liquidity preference", or the market opinion as to the future price of government securities, should simply be regarded as one of these possible constraints on the action of the authorities, which *as such* may act, in specific situations, as a determinant of the actual course of the rates of interest. A far more important part may be (and has been) played in other situations by external constraints, or by objectives of a fiscal nature.

Thus my contention is that interest rate determination can be described in terms of sets of objectives and constraints, on the action of monetary authorities, having different weights both among various countries and for a particular country at different times. I believe that an ideal *History of Interest Rates* — a thorough consideration of the circumstances that have governed the course of interest rates in the major capitalist countries — is bound to lead one to see clearly that interest rate determination is not subject to any general law.

5. Wray points out correctly that my analysis carries the view that "the interest rate determines the markup of prices over nominal wages", but then he suggests that this amounts to focusing on the behaviour of individual firms, for which interest and the expected normal rate of profit are given, rather than on that of the economy as a whole, for which they must be determined. But by considering the money rate of interest as a policy-determined magnitude which can be taken as "'given' before the prices

are fixed",<sup>10</sup> a very close and direct link is established between the 'microeconomic' behaviour of firms as to cost computing and pricing, and the 'macroeconomic' outcome as to normal distribution of income between profits and wages. In the view I hold, the money rate of interest which each firm takes as given at any one time, and on which it bases its calculations, does not have to be 'validated' in the long run by any general equilibrium between demand and supply in the markets for goods and production factors; nor does that money rate of interest have to be 'validated' by an independently determined real wage rate, or by the rate of growth of the economic system (the two variables that govern the ratio of prices to money wages in the classical and the 'post-Keynesian' theories of distribution, respectively). The point is that to conceive of the money rate of interest as an exogenously determined variable amounts to regarding it as a *determinant* of normal costs and prices; and the 'microeconomic' mechanism whereby prices are determined on the basis of costing-margins which tend to be adjusted to any lasting change in the rate of interest, is one and the same thing as the mechanism whereby changes in money interest bring about changes in normal distribution.

6. The explanation of normal distribution put forward in my contribution is entirely compatible with the surplus approach. As a matter of fact, the concept of profit as surplus product is *not* under discussion when one asks which forces determine which 'independent' variable in the present reality of the capitalist economy. In my explanation of distribution the existence of profits continues to be viewed simply as due to the facts that (a) technical conditions are such that the social product normally exceeds what is necessary for its reproduction (which includes the necessary subsistence of the workers), and (b) social relations such that workers can be given less than they produce. This being granted, the question I have been concerned with is whether the relations that workers and capitalists establish with one another tend primarily to act upon the real wage or upon the rate of profit — so as to understand how the division of the surplus between capitalists and workers is actually arrived at, once the classical view that real wages consist solely of the necessary subsistence of the workers is abandoned and the possibility of variations in the division of the social surplus is admitted. The starting point for the solution proposed in my contribution can be said to have been the difficulty I found in conceiving the real wage as the independent or 'given' variable in the conditions of modern capitalism.<sup>11</sup>

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<sup>10</sup> P. SRAFFA, *Production of Commodities by Means of Commodities*, Cambridge, Cambridge University Press, 1960, p. 33.

<sup>11</sup> Cf. on this "On the Monetary Explanation", *op. cit.*, pp. 94-95.